Tourism Marketing in a Metaverse Context: The New Reality of European Museums on Meta

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The "contactless" culture established after COVID-19 and the development of metaverse technologies, such as virtual reality, augmented reality, blockchain and artificial intelligence, serve as vectors of change in museum tourism. Contactless behaviours have forced European museums to reconfigure and strengthen their digital communication and marketing strategies, mainly through social media and audiovisual content, to connect with their audience by virtual means only. This experience has laid the foundations for hybrid communication (physical and virtual) by museums and acted as a pilot experience for their activities in the metaverse of the future. The aim of this research is to analyse the online tourism communication strategies implemented by 20 European museums through Facebook (Meta) in times of COVID-19. The results show the effect of lockdown on patterns of consumption and interaction, and the impact of message content and format on user engagement and participation.

Keywords: tourism marketing; COVID-19; museums; Europe; metaverse; Meta.

Introduction

Culture and tourism have always gone hand in hand. The act of travelling is a source of culture for both the traveller and his or her host, and culture, in turn, draws travellers towards it. The increase in specifically cultural tourism since the 1980s has led experts and practitioners to view it as a niche sector within the wider tourism industry (Han et al. 2019).

Europe's extensive and incomparable heritage of museums, theatres, historic cities, archaeological sites, music and gastronomy has made it an essential cultural tourism destination for travellers the world over. The European Commission (2020) estimates that cultural tourism accounts for 40% of all tourism activity in Europe, with its museums representing more than 54% of total museum attendance worldwide (TEA-AECOM 2020).
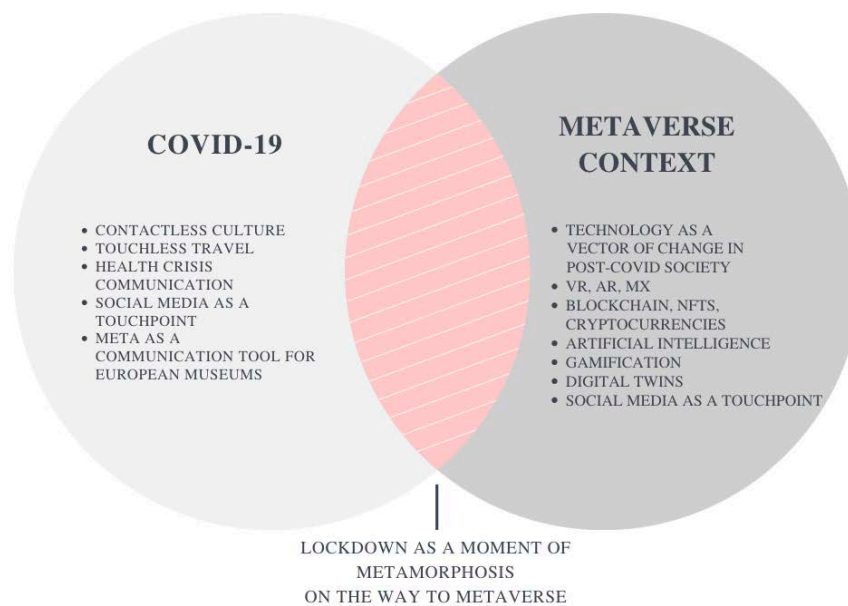
The COVID-19 pandemic declared by the World Health Organisation (WHO) on 11 March 2020 has had an enormous impact on the whole tourism industry, cultural tourism included (Junxiong, Nguyen and Coca-Stefaniak 2020; Leach, MacGregor, Scoones and Wilkinson, 2021; Glusac, 2020; Kaczmarek, Perez, Demir and Zaremba, 2021; Rasoolimanesh, Seyfi, Rastegar and Hall, 2021). Social distancing, limitations on mobility and mandatory quarantine, among other measures to contain the virus, have interrupted travel, tourism and leisure worldwide (Sigala 2020). Contactless culture has taken hold in society (Lee, Park and Lee, 2022). Tourists have adopted new behaviours, such as taking health precautions when travelling or avoiding crowded places, events and/or group travel. We are thus facing a new tourist who demands contactless services and amenities as part of a wider touchless/contactless travel experience (Sigala, 2021).

Despite the physical interruption of tourism, however, tourism communication never stopped. Throughout the pandemic, the industry continued to use virtual tourism technologies to influence visitor choices and promote its products (Lu, Xiao, Xu, Wang, Zhang and Zhou, 2022). Social media have allowed tourists to share memories of past trips and dreams of future experiences, fuelled by the continuing flow of information on travel company and destination profiles and websites. The pandemic has seen museums and other tourist attractions open their doors virtually to present their exhibitions to the world and generate interest among future in-person visitors (Gretzel et al. 2020). This increase in the presence and activity of museums online has accelerated a trend initiated prior to the pandemic of involving visitors in the creation of content through social media (TEA-AECOM 2020).

For most European museums and their visitors, the lockdown period was a moment of metamorphosis in which they had their first encounter with virtual tourism (Image 1). Hybrid (physical-virtual) communication has become the new norm for

museums, tourist behaviour is changing, and new possibilities for the creation of virtual museology products are emerging. Understanding what happened during this period will help to understand the role of social media as a future touchpoint between tourists and metaverse museums (Lee, Park and Lee 2022). For example, in the metaverse, the offerings of virtual museums will be made known through other online platforms, such as YouTube and Instagram, and as the transition is made from flat media to immersive media, advertising will increasingly shift from traditional content (text, images, video) to more natural, immersive and intuitive experiences in virtual or augmented worlds (Rosenberg, 2022).

Image 1. The moment of change

COVID-19

- CONTACTLESS CULTURE
- TOUCHLESS TRAVEL
- HEALTH CRISIS COMMUNICATION
- SOCIAL MEDIA AS A TOUCHPOINT
- META AS A COMMUNICATION TOOL FOR EUROPEAN MUSEUMS

METAVERSE CONTEXT

- TECHNOLOGY AS A VECTOR OF CHANGE IN POST-COVID SOCIETY
- VR, AR, MX
- BLOCKCHAIN, NFTS, CRYPTOCURRENCIES
- ARTIFICIAL INTELLIGENCE
- GAMIFICATION
- DIGITAL TWINS
- SOCIAL MEDIA AS A TOUCHPOINT

LOCKDOWN AS A MOMENT OF METAMORPHOSIS ON THE WAY TO METAVERSE

The importance of social media as part of the destination marketing mix is undeniable (Ryden, Kottika, Hossain, Skare and Morrison, 2020). Social media represent an opportunity for companies in the tourism industry to obtain more information about customer needs and find new ways to meet their expectations (Colladon, Grippa and Innarella 2020), to market and promote their products (Eagleman 2013; Önder, Gunter and Gindl 2020; Roth-Cohen and Lahav 2019; Buhalis and Sinarta, 2019), to involve

customers in the different stages of their trip (Demmers, Weltevreden and van Dolen, 2020), and to communicate the brand personality of destinations (Lalicic, Huertas, Moreno and Jabreel, 2020).

Despite extensive research on the role and importance of social media marketing in the tourism sector, less attention has been paid to the specific impact of message content and format on tourism social media users (Leung, Bai and Erdem 2017). For destination marketers, it is essential to know what published content is perceived as interesting and therefore drives consumer engagement (Pachucki, Grohs and Scholl-Grissemann, 2022). Another new area of investigation in the wake of the COVID-19 emergency is the idea of the pandemic as an opportunity for transformation (Sigala 2020; Gretzel et al. 2020), particularly in relation to the resilience of the sector and changing attitudes to tourism destinations in times of crisis (Junxiong, Nguyen and Coca-Stefaniak 2020; Mayer and Hendler 2022). The aim of this article is, therefore, to analyse tourism communication and engagement on Meta by European museums in times of COVID-19.

Theoretical background

Metaverse and its context

Technology is one vector of change in the post-COVID society. Without information technology (IT), tourism would not have been possible during the pandemic (Gretzel, Fuchs, Baggio, Hoepken, Law, Neidhardt, ... and Xiang, 2020), and technological innovation has played a key role in the industry's recovery since then (Shin and Kang 2020).

The improvement and increasing sophistication of technologies such as virtual reality (VR), augmented reality (AR), 3D and 360º technology, blockchain and the

internet of things (IoT) are revolutionising tourism supply and demand by creating more and more immersive touchpoints with consumers (Wei, 2022; Dwivedi et al., 2020; Gursoy, Malodia and Dhir, 2022).

The term metaverse combines the prefix *meta* (meaning after, behind or beyond) and the word *universe* (Lee, Park and Lee, 2022; Dwivedi et al., 2022; Njoku, Nwakanma, Amaizu and Kim, 2022). It is defined as an ecosystem of shared and interconnected digital and physical environments that can be experienced synchronously, where physical and technological realities are seamlessly blended (Golf-Pape et al., 2022). Enabled by Internet 3.0, the metaverse refers to a three-dimensional virtual space that focuses on social connections (Gursoy, Malodia and Dhir, 2022). The word itself was coined in the 1992 science fiction novel *Snow Crash* by Neal Stephenson (Stephenson 1992), though the concept was first described nearly a century earlier in E. M. Forster's *The Machine Stops* (1909). Its popularity grew following the launch of the virtual world platform Second Life in 2003 (Hollensen, Kotler and Opresnik 2022), often considered the first metaverse, and has since expanded to other brands and sectors. In 2021, Facebook, the social media giant, actually rebranded itself as Meta (Kim 2021).

Virtual tourism (or "cloud tourism"), as it has been known up to now, uses virtual reality (VR) and augmented reality (AR) technologies as well as live video streaming (Lu et al. 2022). Metaverse (Koo, Kwon, Chung and Kim, 2022) or metaversal (Solakis, Katsoni, Mahmoud and Grigoriou, 2022) tourism combines physical reality and mixed reality (MR), which in turn combines AR and VR. These types of tools allow tourism products to be consumed by different audiences (e.g. people with reduced mobility) or in different situations (e.g. restricted travel due to the COVID-19 pandemic) (Ilkhanizadeh et al. 2020). The growing application of technology in cultural tourism and the resulting

overlaps between real world and virtual experiences are a current and exciting area of research for the tourism industry (Richards, 2018).

A true metaverse, in the sense of a digital universe parallel to our analogue world, where participants can conduct social, economic, artistic and entertainment activities other than video games, has yet to be created and the development of enabling technologies is not yet complete (Goertzel, 2022). Numerous companies, such as Meta, Microsoft, Epic Games and Google, are currently working on and investing in emerging technologies related to the metaverse, such as virtual reality headsets, augmented reality sensors and blockchain (Gorichanaz, 2022).

Even though the metaverse is still under construction (de la Fuente Prieto, Lacasa and Martínez-Borda, 2022), the tourism industry has already begun to implement its technologies. The agents involved (hotels, restaurants, transport, leisure activities, museums) have "tangibilised" their services and launched immersive experiences on the market (Koo, Kwon, Chung and Kim, 2022). In fact, metaverse has become one of the most significant alternatives to offline events, even for museum exhibitions (Lee, Park and Lee, 2022). For example, in the multimedia Van Gogh Alive exhibition, exhibited in 130 countries across six continents, the painter's work is brought to life through projections that combine light, colour and music to give the viewer the sensation of being part of the paintings (Frey and Briviba, 2021). On the ZEPETO chat app, Naver Z has created the virtual museum Renaissance, which, unlike physical museums, allows users to interact with the artworks (e.g. take pictures or videos with the artworks), sit in the museum or even run around. The Royal Museum of Fine Arts Antwerp (KMSKA), meanwhile, has introduced a system of Art Security Tokens to make masterpieces accessible to the public (KMSKA, 2022), and the Kharkiv Art Museum in Ukraine has launched a new non-fungible token (NFT) collection with Binance to support Ukrainian

cultural heritage. The market for NFTs is an opportunity for museums to raise money, to track of all information related to transactions, and to engage audiences and develop a sense of community between participants and museums (Jung, 2020).

Social media and content marketing in the tourism sector

The possibilities offered by social media activity for the tourism sector include: 1) interaction between promoter and client (Chen et al. 2014); 2) sharing of opinions, photographs and videos about tourism products and services with other users (Mangold and Faulds 2009), and 3) the opportunity for future tourists to interact with other members of their travel community before, during and after their trip, with the aim of positively influencing their choice of a destination (McLeay, Lichy and Major 2019; Kang and Schuett 2014; Mendes-Filho et al. 2018; Dedeoğlu et al. 2020).

From a business point of view, social media enhance communication with the client while facilitating the creation of inbound marketing strategies. Unlike traditional strategies (i.e. outbound marketing), inbound marketing attracts the consumer by offering valuable content, relevant experiences and non-intrusive advertising (Lehnert, Goupil and Brand 2020) through blogs, podcasts, e-books, e-newsletters, websites, search engines, social media marketing and content marketing, among other methods (Dakouan, Benabdelouahed and Anabir 2019; Jiménez, Alles and Franco 2018). In recent years, owing to the saturation of advertising in traditional media, many consumers have developed a conscious or unconscious ability to ignore promotional content. Inbound marketing offers companies and brands alternative channels through which to establish relationships with customers and increase the probability of their purchasing a certain product.

Content marketing, for example, is designed to attract a particular type of customer by capturing their attention, securing their loyalty and ultimately turning them into a brand prescriber (Soegoto and Simbolon 2018; Du Plessis 2017). To do this, brands create and distribute free informative or entertaining content, especially online, through blogs, social media posts, videos, images, websites, webinars, etc. that are consumed, either voluntarily or unconsciously, by users. By distributing such content on a wide variety of platforms, companies build brand awareness and credibility among their online community of customers (Wall and Spinuzzi 2018).

Content and format

Informed message design, planning and user response analysis is essential to creating an effective marketing plan (Molina et al. 2020; Govers and Go 2004). Message strategy thus consists of two basic components: what to say (message content) and how to say it (message format) (Taylor 1999; Laskey, Day and Crask 1989; Laskey, Fox and Crask 1995; Leung, Bai and Erdem 2017).

Message content

Message content should aim to satisfy the needs of consumers in order to encourage their engagement with the brand or product on social media (Tafesse and Wien 2018). Studies show that messages published on social media by companies in the tourism sector are mainly of an informative, educational or persuasive nature, depending on the aim of the communication. The most frequent types of content in messages of this kind include: calls to action; rewards; information about cultural, culinary, recreational, sports and children's activities, and messages about social issues (Molina et al. 2020).

Message format

The different types of message format used by destination marketing organisations to broaden the reach and impact of their content include: videos, photographs, hashtags and weblinks (Uşaklı, Koc and Sönmez 2017).

Videos and virtual tours

Video is becoming more and more prevalent on social media and is gaining increasing traction as a digital marketing tool for companies. In fact, during the COVID-19 pandemic, consumption of video content on social media apps by Gen Z and millennials grew by 61% (Statista 2021a). In the tourism industry, visual content such as videos is considered an effective means of attracting the interest of potential visitors and increasing engagement between tourism agents and social media users (Gálvez-Rodriguez et al. 2020).

During the Covid-19 pandemic, tourism stakeholders, including museums, adopted innovative approaches such as virtual tours (VT) to maintain their market position (El-Said and Aziz, 2022). Attractions such as the Louvre, the Guggenheim Museum, Vatican City, Yosemite National Park and many others offered virtual tours for tourists confined in all parts of the world (Itani and Hollebeek, 2021). These live virtual tours have created a new segment of tourists who "travel from home", with the potential to physically visit in the future places they have already seen virtually (Mastroberardino, Calabrese, Cortese and Petracca, 2021).

Photographs

At the end of the 20th century, Jenkins (1999) explained how tourism products are transformed into commercial images before being consumed. Images are essential in

the tourism sector because it sells products of an intangible nature that cannot be tasted, smelled, touched or experienced prior to travel, and tourists have always purchased trips based on the approximate idea created in their minds by the photographs that appear in brochures, books, websites, etc. More recently, studies such as Höffler and Schwartz (2011), San Eugenio (2011) and Kim, Kim and Wise (2014) have analysed the influence of photographs shared on social media on the behaviour and attitudes of tourists in relation to matters such as choice of destination.

Hashtags

Hashtags are words, abbreviations or phrases written without spaces and preceded by the # sign that may be classified as informative (facts, locations, etc.) or emotional (opinions, judgements). Within the informative category, the following subgroups may be identified: statements about objects (colour, image, size); descriptions of purpose (function, use); knowledge (definitions); data (numbers, figures); decisions; results, and recommendations (Ye et al. 2018; Wicker and Kim 2003).

Weblinks

Social media posts may also include weblinks, which redirect users either to the company or destination site to allow them to complete their purchase or seek more information about a given product, or to other websites, to supplement the information provided in the original post. Research shows that user engagement may be influenced by the position and timing of links within the message (Chawla and Chodak 2021).

Message effectiveness

According to Hao (2020), customer engagement in the tourism sector is achieved and maintained through a long-lasting service relationship. With the rise of social media, both academics and marketing professionals have become interested in understanding the effect of online platforms on customer engagement (Cvijikj and Michahelles 2013; Huertas, Setó and Míguez 2014), since engagement in turns affects brand loyalty, purchase intention and purchase decisions (Villamediana-Pedrosa, Küster and Vila 2019).

Stakeholder engagement on Meta has been defined as the sum of three metrics: popularity (P), commitment (C) and virality (V) (Bonsón and Ratkai 2013; Villamediana-Pedrosa, Küster and Vila 2019; Molinillo et al. 2019). Popularity refers to the number of "likes" received by a message (Bonsón and Ratkai 2013), as a measure of its attractiveness or acceptance (Molinillo et al. 2019). Commitment is measured in "comments" (Bonsón and Ratkai 2013) and reflects a deeper level of connection between users and the brand (Molinillo et al. 2019). Finally, virality is calculated based on the number of "shares" (Bonsón and Ratkai 2013) and is a gauge of the users' interest in the brand and its content (Molinillo et al. 2019).

$$P = \frac{Total\ number\ of\ likes / Total\ number\ of\ posts}{number\ of\ followers} \times 1.000$$

$$C = \frac{Total\ number\ of\ comments / Total\ number\ of\ posts}{number\ of\ followers} \times 1.000$$

$$V = \frac{Total\ number\ of\ posts\ shared / total\ number\ of\ posts}{number\ of\ followers} \times 1.000$$

Engagement (E) is, thus, the sum of these three variables (E = P + C + V) and indicates the level of user participation in a brand (Hollebeek and Chen 2014;

Villamediana-Pedrosa, Küster and Vila 2019; Villamediana-Pedrosa, Vila and Küster 2019).

Methodology

In addition to the general aim of this study, i.e. to analyse tourism communication on Meta by European museums in times of COVID-19, the following specific aims were also defined:

- To assess user engagement with European museum Meta accounts over two three-month periods in consecutive years (March-May 2019 and March-May 2020) in order to detect any variation between them which may be attributable to the first lockdown of the COVID-19 pandemic in Europe.

- To analyse the content and format of the messages published by the European museums with the highest engagement during the first lockdown of the COVID-19 pandemic in Europe (March-May 2020).

The research is based on a case study of the 20 most visited museums in Europe (TEA-AECOM 2020): Louvre (Paris, France), Vatican Museums (Vatican,Vatican City), British Museum (London, UK), Tate Modern (London, UK), National Gallery (London, UK), Natural History Museum (London, UK), State Hermitage (St Petersburg, Russia), Reina Sofía (Madrid, Spain), Victoria & Albert (London, UK), Musée d'Orsay (Paris, France), Centre Pompidou (Paris, France), Science Museum (London, UK), Museo Nacional del Prado (Madrid, Spain), State Tretyakov Gallery (Moscow, Russia), Rijksmuseum (Amsterdam, Netherlands), Cité des Sciences et de l'Industrie (Paris, France), Galleria Degli Uffizi (Florence, Italy), Auschwitz-Birkenau Museum

(Oświęcim, Poland), National Museum of Scotland (Edinburgh, UK) and Van Gogh Museum (Amsterdam, Netherlands).

According to Coller (2000), the case study method can be used to explore, test and build theories, and is thus a valuable tool for research in the social sciences, including tourism (Coller 2000; Yin 1994; Bramwell and Lane 2011).

In addition, a descriptive content analysis of the data was conducted. Descriptive content analysis is defined by Piñuel Raigada (2002) as the set of interpretive methods applied to communication products (messages, texts, discourses) based on measurement techniques (either quantitative or qualitative) that are intended to obtain and process relevant data on said products.

2073 photos, 897 videos, 140 status and 421 links were analysed as part of the study. The analysis sheet used to collect data from the content analysis is structured as follows.

Table 1: content analysis sheet

Message format	Message content
Videos/virtual tours	Informative, educational or persuasive content.
Photographs	The most frequent types of content are: calls to action; rewards; information about cultural, culinary, recreational, sports and children's activities, and messages about social issues.
Hashtags	
Weblinks	
Message effectiveness/engagement	

To address the first specific aim, Meta data were extracted using the Fanpagekarma.com tool used by authors such as Huertas, Setó-Pàmies and Míguez-

González (2014), Wozniak et al. (2017) and Trunfio and Della Lucia (2017) in their analyses of social media in a tourism context.

Meta was selected as the focus of the study because it is the most commonly used social platform among tourism organisations and has been the subject of other recent studies on the relationship between tourism and social media (Uşaklı, Koç and Sönmez 2017; Mariani, Di Felice and Mura 2016; Stankov, Lazić and Dragićević 2010). In addition, with approximately 2.7 billion monthly active users, Meta remains the most frequented social media platform worldwide (Statista 2021b).

Lastly, it should be noted that as the Vatican Museums do not have a Meta profile, they have been omitted from the analysis, and in the case of Galleria Degli Uffizi, the museum's Meta page was created on 10 March 2020, at the beginning of the lockdown in Italy, making comparison of engagement figures for the years 2019 and 2020 impossible.

Results

Message effectiveness: engagement

Figure 1 shows a comparison of user engagement with the Meta profiles of the European museums analysed for the periods March-May 2019 and March-May 2020. Despite considerable variation between some of the museums, there is a clear overall trend of higher engagement in 2020 than in 2019. The only exception to this is the Science Museum in London (United Kingdom), which shows a better engagement rate in 2019 than in 2020. The museums with the highest engagements rate in 2020 are: State Hermitage Museum (St Petersburg, Russia) (3.72), Van Gogh Museum (Amsterdam, Netherlands) (3.07), State Tretyakov Gallery (Moscow, Russia) (2.81) and Museo Nacional del Prado (Madrid, Spain) (2.75).

Figure 1. Comparison of user engagement with European museum Meta profiles

(March-May 2019 / March-May 2020)
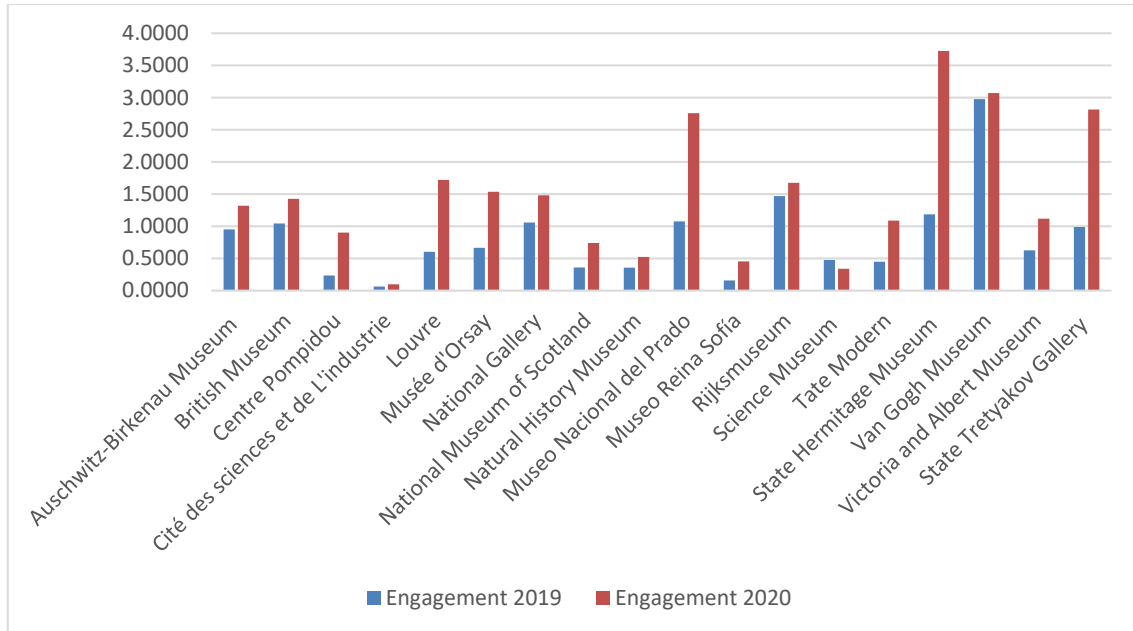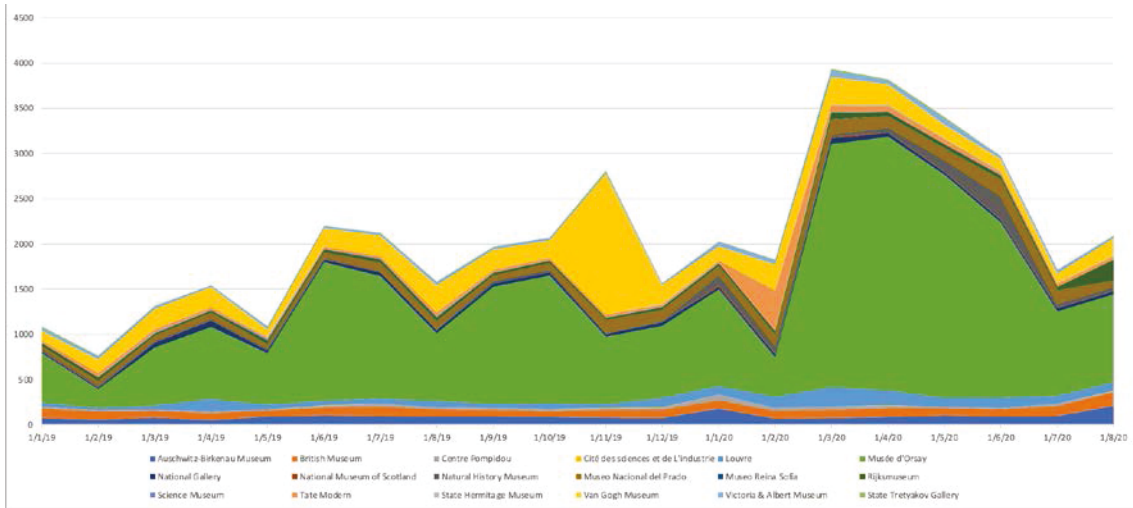

Note: based on data from fanpagekarma.com

The lockdown led to an increase in the number of users connecting to Meta, as well as browsing time, content creation and interactions. This change in digital consumption also extended to the cultural content published online by European museums, as illustrated by the increase in the number of likes, comments and shares in the months studied (March-May 2020). A clear increase in all three engagement variables (popularity/likes, commitment/comments, virality/shares) is observed during the three months of the lockdown, most notably in the case of the State Tretyakov Gallery (Moscow, Russia), the Victoria & Albert Museum (London, United Kingdom) and the Van Gogh Museum (Amsterdam, Netherlands) (see Figures 2, 3 and 4).

Figure 2. Monthly Meta "likes" on European museum profiles (2019-2020)
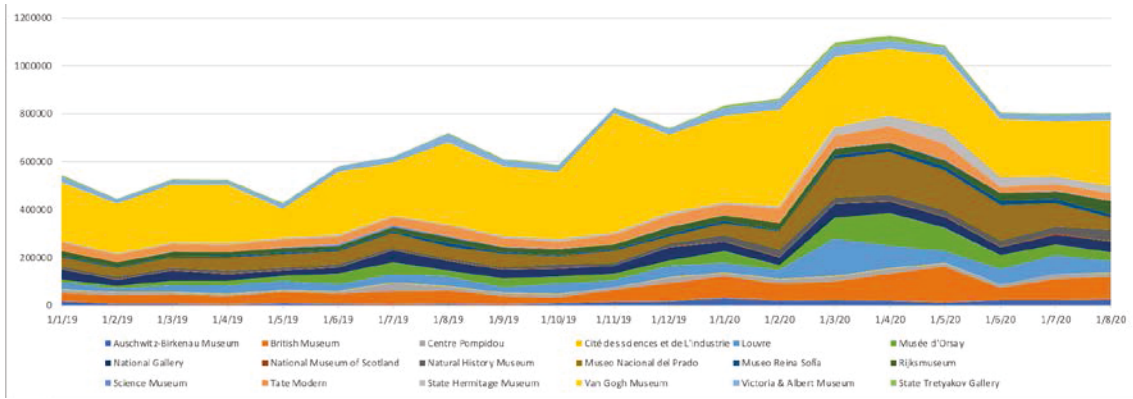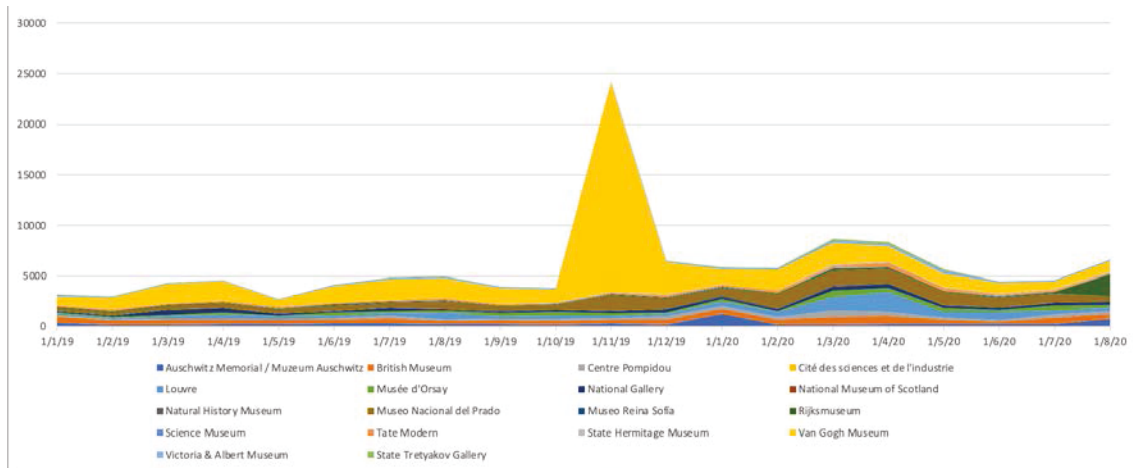
Note: based on data from fanpagekarma.com

Figure 3. Monthly Meta comments on European museum profiles (2019-2020)

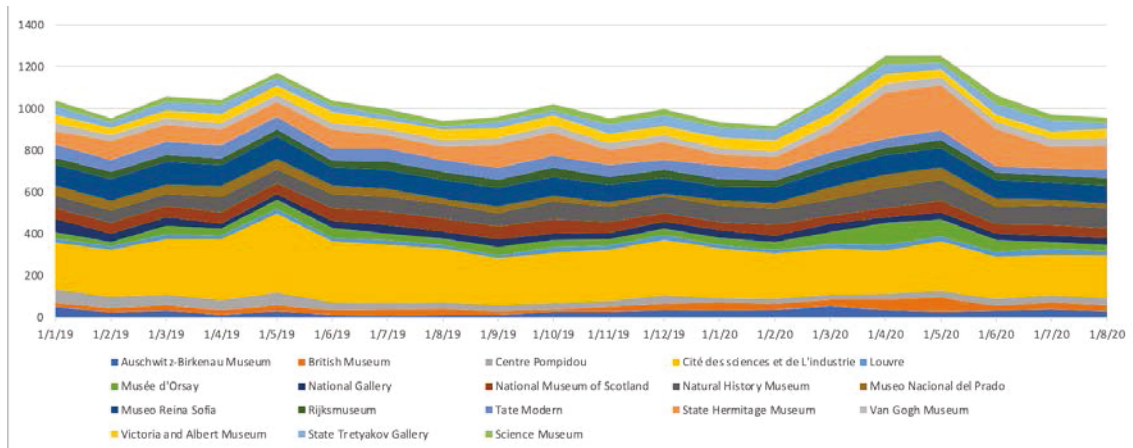

Note: based on data from fanpagekarma.com

Figure 4. Monthly Meta shares on European museum profiles (2019-2020)

Note: based on data from fanpagekarma.com

The analysis of the museums' own activity during the period of lockdown shows an increase in the number of publications in 2020 relative to 2019 by four of the museums surveyed: State Tretyakov Gallery, Victoria & Albert Museum, Van Gogh Museum and State Hermitage Museum (Figure 5). Significantly, however, while the numerical increase in publications in 2019 may be represented as a momentary peak, in 2020 it takes the form of a plateau, reflecting a more sustained communication effort on the part of the museums. The three most communicatively productive museums also perform highest in terms of likes, shares and comments. Contrary to expectations, however, the high rate of posts produced by the Victoria & Albert Museum in 2020 is not matched by a comparably high rate of engagement, indicating that frequency of publications is not always a predictor of user engagement.

Figure 5. Monthly Meta publications by European museums (2019-2020)

Note: based on data from fanpagekarma.com

Message content and format

This section analyses the messages published on Meta by the European museums with the highest rates of engagement between 1 March 2020 and 31 May 31 2020 (Figure 1) in order to identify and assess the strategies used in terms of message content and format. For the purposes of clarity, an explanation of the type of content published in each case is presented alongside the information related to format.

Figure 6 shows the level of interaction (i.e. likes, comments, shares) by format type (i.e. photographs, videos, weblinks) with the publications of the museums with the highest rates of engagement during the period March-May 2020. The results show that photographs and videos obtain the highest levels of interaction on the part of their followers, with videos scoring higher than photographs in three of the four museums surveyed (State Hermitage Museum, State Tretyakov Museum and Museo Nacional del Prado).

Figure 6. Interaction by format type by the museums with the highest engagement rates (March-May 2020)
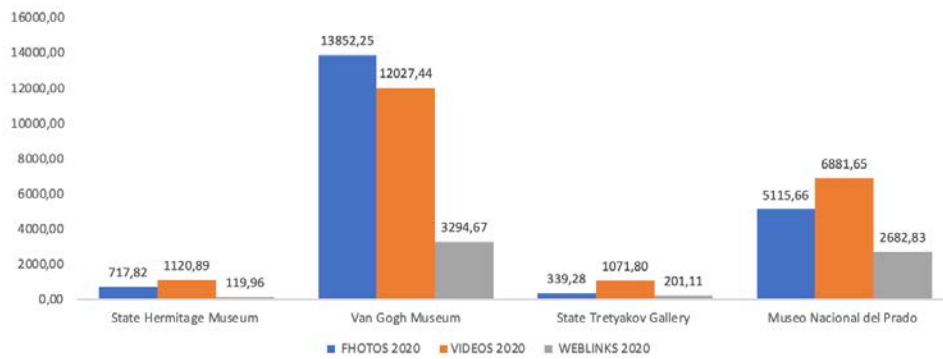
Note: based on data from fanpagekarma.com

A comparison of the period March-May 2020 likewise shows a considerable increase in the number of video publications in the same three museums as before, the Van Gogh Museum proving the exception once again. The State Hermitage Museum increases its rate of publication from 36 videos in 2019 to 198 in 2020; the State Tretyakov Gallery goes from 36 in 2019 to 47 in 2020, and, lastly, the Museo Nacional del Prado surges from 16 in 2019 to 103 in 2020. It should be noted that in the Prado and the State Tretyakov Gallery, the increase in the number of video publications is observed to be at the cost of photograph postings.

The growing importance of video communication and its impact on engagement require closer analysis of the individual strategies adopted by each of the museums. In the case of the State Hermitage Museum, three different types of video format were identified (Table 2). The first consists of guided tours lasting 20-30 minutes of a room at the museum or an individual artwork. The commentary component varies between that of an on-camera host and a voiceover. It should be noted that these videos were initially hosted on the museum's official YouTube page (see Table 2) and subsequently shared on their Meta profile. The second type of videos used by the State Hermitage Museum are short information videos lasting three minutes or less about the rooms and artworks at the museum. The audio component in this instance consists of background music or a

voiceover commentary. The videos which achieved the highest levels of interaction were the live guided tours of the different rooms and artworks, lasting 30-40 minutes. The frequency of these videos increased as the lockdown period progressed.
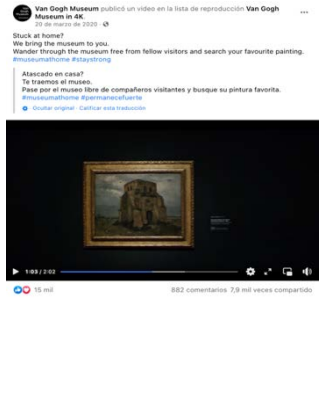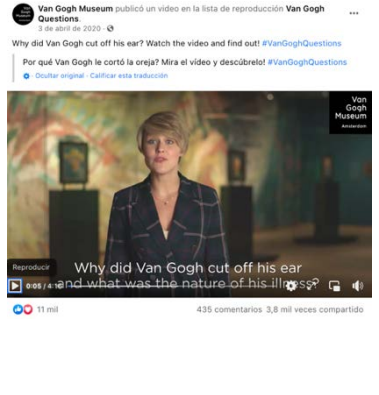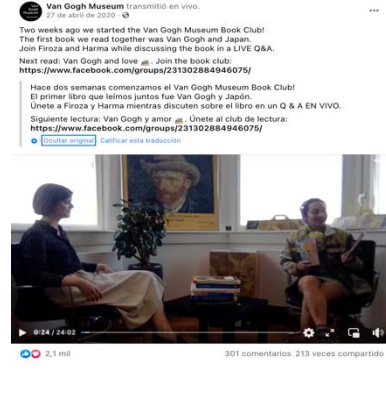
Table 2. Types of videos published by the State Hermitage Museum during lockdown

Type 1: video explanation of artworks and/or rooms at the museum (20 minutes)	Type 2: short information video (3 minutes)	Type 3: live guided tours of the rooms and artworks of the museum (30-40 minutes)
Государственный Эрмитаж. The State Hermitage museum. Official page. 31 de marzo de 2020 · Интеллигентная изоляция Премьера: Жилые покои Зимнего дворца. Апартаменты императрицы Марии Александровны В 16.00 мы вместе с вами переместимся в Зимний дворец и посетим комнаты императрицы Марии Александровны. Об апартаментах супруги императора Александра II, считавшихся самой красивой частью жилых покоев во дворце, рассказывает Елена Туркова, сотрудник Научно-просветительского отдела Государственного Эрмитажа. #hermitage_online #эрмитаж_онлайн #лучшедома #stayhome — Aislamiento inteligente Estreno: habitaciones residenciales del Palacio de Invierno. Apartamentos de la emperatriz María Alexandrovna A las 16.00 nos trasladaremos juntos al Palacio de Invierno y visitaremos las habitaciones de la Emperatriz María Alexandrovna. Elena Turkova, empleada del Departamento Científico y Educativo de Ermitage del Estado, habla sobre los apartamentos de los cónyuges del Emperador Alejandro II. #hermitage_online #эрмитаж_онлайн #лучшедома #stayhome · Ocultar traducción · Calificar esta traducción — Жилые покои Зимнего дворца Апартаменты императрицы Марии Александровны 31 марта 16:00 MSK — YOUTUBE.COM Премьера: Апартаменты императрицы Марии Александровны В этом выпуске мы переместимся в Зимний дворец и посетим комнаты импер... — 317 · 7 comentarios 135 veces compartido	Государственный Эрмитаж. The State Hermitage museum. Official page. 19 de marzo de 2020 · Выставка «Это сам Потемкин!» временно недоступна для посещения, но мы продолжаем знакомить вас с этой масштабной экспозицией. Потемкин был хорошо известен тягой к созданию грандиозных празднеств, красочных и сказочных действ. Ни одно торжество в то время не обходилось без «огненных потех» и иллюминаций. 28 апреля 1791 года светлейший князь дал в Таврическом дворце бал-маскарад по случаю взятия Измаила. К празднеству было закуплено огромное количество различных люстр, бра, лампад, светильников, которые наполняли благовонным воском. Большой зал особняка также был украшен двумя люстрами – жемчужинами в коллекции Потемкина. Это были не только осветительные приборы, но и музыкальные инструменты. Внутри каждой из них находилось по два механизма: первый приводил в движение ряд рожков со свечами, что давало мерцание света; после захода второго начинали звучать короткие музыкальные произведения, всего 12 композиций. Благодаря этому свойству такие изделия именовали «люстрами с органами» («с органом» – так в XVIII веке могли назвать любой механический автомат, который воспроизводил музыку). Парные люстры были изготовлены в Англии в 1760-х – начале 1770-х годах. Возможно, к их созданию причастен Уильям Паркер. Люстры были выполнены по заказу герцогини Кингстон (или ее супруга), которая привезла светильники с музыкальными механизмами в Россию, где их и купил известный англоман князь Григорий Потемкин. Видеоролик о люстре с музыкальным механизмом подготовлен к выставке «Это сам Потемкин!». Автор: Манас Сираканян — La exposición '' Este es el mismo Potemkin!'' no está disponible temporalmente para visita, pero seguimos presentándoos a esta exposición a gran escala. Potemkin fue conocido por el antojo de la creación de grandes celebraciones, acciones coloridas y fabulosas. Ninguna celebración en ese momento era sin '' diversión de fuego '' e iluminación. El 28 de abril de 1791, el príncipe más brillante dio una pelota de mascarada en el Palacio Tauric con motivo de la adopción de Izmail. Un gran número de candelabros diferentes, sostén, lámparas, lámparas que se llenaron de cera de incienso fueron comprados para la celebración. El gran salón de la mansión también fue decorado con dos candelabros - perlas en la colección Potemkin. Estos no sólo eran dispositivos de iluminación, sino también instrumentos musicales. Dentro de cada uno de ellos había dos mecanismos: el primero puso en movimiento una serie de cuernos con velas, que daban un brillo de luz; después de la fábrica la segunda comenzó a sonar obras musicales cortas, con sólo 12 canciones. Gracias a esta propiedad, tales productos se llamaban '' candelabros con órganos '' ('' con un órgano '' – así que en el siglo XVIII pudieron nombrar cualquier máquina mecánica que tocara música). Parejas de candelabros fueron fabricados en inglaterra en los años 1760 y principios de 1770 William Parker podría estar involucrado en su creación. Los candelabros fueron ordenados por la duquesa Kingston (o su cónyuge), que trajo lámparas con mecanismos musicales a Rusia, donde el famoso príncipe Grigory Potemkin los compró. Video sobre la lámpara con un mecanismo musical preparado para la exposición '' Este es el mismo Potemkin!''. Autor: Manas Sirakanyan · Ocultar traducción · Calificar esta traducción — 610 · 22 comentarios 273 veces compartido	Государственный Эрмитаж. The State Hermitage museum. Official page. transmitió en vivo. 5 de abril de 2020 · Марьям Дандамаева, куратор выставки, учёный секретарь Эрмитажа, расскажет вам о выставке «Я воздвиг там мой царский дворец». Памятник ассирийского искусства из Британского музея». Искусство Ассирии известно именно благодаря царским дворцам. Построенные из кирпичей, сделанных из необожжённой глины (в Ассирии не было другого строительного материала), стены дворцов на высоту двух - трех метров были покрыты каменными рельефами. Дворцы разрушались вскоре после падения Ассирии в конце VII века до н.э., превратившись в огромные бесформенные холмы, лишь нижние части стен, поддерживаемые рельефами, сохранились и были открыты европейскими археологами в 40-х годах XIX века. Главная тема рельефов состояла в прославлении царя: царь в бою, царь охотится на диких зверей, царь празднует победу или совершает ритуал поклонения богам. — Maryam Dandamaeva, la curadora de la exposición, la científica de la Ermita, te hablará de la exposición '' Construí el palacio de mi rey allí ''. Los monumentos del arte asirio del Museo Británico ''. Se conoce el arte de Asiria Gracias a los palacios reales. Construido de ladrillos hechos de arcilla imprevista (Asiria no tenía otro material de construcción), las paredes de los palacios estaban cubiertas de relieves de piedra. Los palacios se estrellaron poco después de que Asiria cayera a finales del siglo XIX a. C. uh., convirtiéndose en enormes colinas sin forma, sólo las partes bajas de las paredes, apoyadas por relieves, fueron preservadas y descubiertas por arqueólogos europeos en los años 40 El tema principal del alivio fue la glorificación del rey: el rey está en batalla, el rey está cazando animales salvajes, el rey celebra la victoria o realiza el ritual de adorar a los dioses. · Ocultar traducción · Calificar esta traducción — 0:33 / 36:42 — 1 mil · 163 comentarios 352 veces compartido

The Van Gogh Museum also published three distinct types of videos during the lockdown: short video tours; short educational videos; and longer live discussion videos (see Table 3). The first type, lasting approximately two minutes, consists of an unnarrated tour of the empty museum rooms, accompanied only by music. The second type, lasting approximately four minutes, features a person on camera answering questions about Van Gogh's personal and professional life, such as "Why did Van Gogh cut off his ear?" or "What was his favourite colour?" The live videos were created as part of the Van Gogh

Museum Book Club initiative, which started life during the lockdown with the aim of fielding discussions about books about Van Gogh. The videos, lasting approximately 30 minutes each, feature staff from the museum providing information and answering questions live.
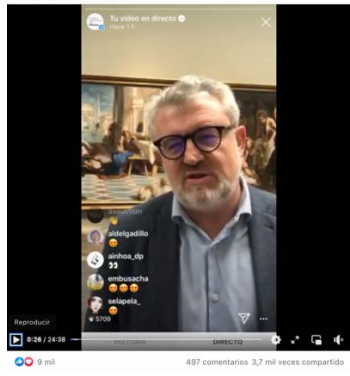
Table 3. Types of videos published by the Van Gogh Museum during lockdown

Type 1: short videos comprising brief tours of the museum	Type 2: short videos dealing with specific questions	Type 3: live videos from the Van Gogh Museum Book Club section (approx. 30 minutes)
Van Gogh Museum publicó un video en la lista de reproducción Van Gogh Museum in 4K. 20 de marzo de 2020 · Stuck at home? We bring the museum to you. Wander through the museum free from fellow visitors and search your favourite painting. #museumathome #staystrong Atascado en casa? Te traemos el museo. Pase por el museo libre de compañeros visitantes y busque su pintura favorita. #museumathome #permanecefuerte · Ocultar original · Calificar esta traducción · 1:03 / 2:02 · 15 mil · 882 comentarios 7,9 mil veces compartido	Van Gogh Museum publicó un video en la lista de reproducción Van Gogh Questions. 3 de abril de 2020 · Why did Van Gogh cut off his ear? Watch the video and find out! #VanGoghQuestions Por qué Van Gogh le cortó la oreja? Mira el video y descúbrelo! #VanGoghQuestions · Ocultar original · Calificar esta traducción · Van Gogh Museum Amsterdam · Reproducir · Why did Van Gogh cut off his ear and what was the nature of his illness? 0:05 / 4: · 11 mil · 435 comentarios 3,8 mil veces compartido	Van Gogh Museum transmitió en vivo. 27 de abril de 2020 · Two weeks ago we started the Van Gogh Museum Book Club! The first book we read together was Van Gogh and Japan. Join Firoza and Harma while discussing the book in a LIVE Q&A. Next read: Van Gogh and love. Join the book club: https://www.facebook.com/groups/231302884946075/ Hace dos semanas comenzamos el Van Gogh Museum Book Club! El primer libro que leímos juntos fue Van Gogh y Japón. Únete a Firoza y Harma mientras discuten sobre el libro en un Q & A EN VIVO. Siguiente lectura: Van Gogh y amor. Únete al club de lectura: https://www.facebook.com/groups/231302884946075/ · Ocultar original · Calificar esta traducción · 0:24 / 24:02 · 2,1 mil · 301 comentarios 213 veces compartido

In the analysis of the videos of the Museo Nacional del Prado (Table 4), practically the same video publication strategy as the previous museums is observed, but with some peculiarities. The first type consists of live guided tours of the museum with experts (20-30 minutes), very similar to video type 3 of the State Hermitage Museum. The second type (approx.10 minutes) consists of a pre-recorded commentary of different artworks by a specialist, and features the hashtag #obracomentada. This group of videos includes content recorded prior to the pandemic (as seen in the example in Table 3), and during lockdown, such as the "empty museum" tours, with commentaries and explanations provided in voiceover. Types 1 and 2 are featured most frequently on the Prado Museum's profiles. The third type, consisting of short videos (approx. two

minutes), has a clearly educational or creative function and is unique to the Prado. An example of this is shown in Table 3 (type 3), where the singer Sheila Blanco explains through song the characteristics of the different painters exhibited at the Museo Nacional del Prado.

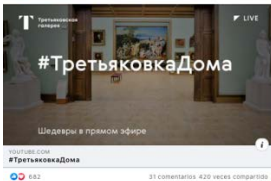Table 4. Types of videos published by the Prado National Museum during lockdown

Type 1: Live guided tours featuring explanations of artworks by experts (approx. 20 minutes)	Type 2: Videos comprising explanations of artworks by experts (approx. 10 minutes)	Type 3: Short homemade videos of an educational and creative nature

The analysis of the State Tretyakov Gallery reveals some novelties relative to the other museums surveyed (Table 5). The first video type, in particular, is especially surprising. These are live videos, broadcast on YouTube and lasting much longer than any of the other video types (over 4 hours). Their aim is to show an artwork from the museum in real time without any explanation or commentary. The interactivity of this type of video is lower than that observed for the live videos published by the other museums. Video type 2 accounts for most of the videos published by the State Tretyakov Gallery: videos lasting approximately 10 minutes in which experts discuss the artworks and rooms at the museum. Lastly, type 3 is also different from the video types used at the rest of the museums analysed, as it involves live broadcasts of video calls between art

experts, in which the participants chat for over an hour about different topics and answer questions from the museum's users. Links to complementary bibliography are also included in the description of the broadcast. In general, videos of this type were found to generate less user interaction than the others.

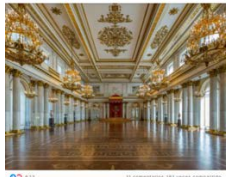Table 5. Types of videos published by the State Tretyakov Gallery during Lockdown

Type 1: live videos broadcast on YouTube showing an artwork from the museum in real time (4+ hours)	Type 2: videos comprising explanations of the museum's rooms and artworks (approx.10 minutes)	Type 3: live broadcasts of video calls between experts on a specific topic (1-2 hours)

Based on this analysis of the different video formats, the content of the published messages may be summarised as mainly informative and educational in nature, and aimed at providing entertainment through culture at an exceptional time of crisis. The types of videos most frequently used by the museums are: short videos lasting approximately 2-3 minutes of unnarrated virtual museum tours accompanied by background music only; live videos lasting approximately 30 minutes of guided museum tours; and, finally, pre-

recorded videos lasting 20-30 minutes of experts commenting on a specific artwork or room at the museum.

The most frequent message format type and the second most productive format in terms of interaction on Meta is photography. Table 6 offers a summary of the four types of photography used by all four of the museums analysed. All of the photograph types feature cultural and educational content adapted to the theme and communication needs of each museum, the most frequent being photographs of museum spaces (type 1) and of the artworks housed by the museum (type 3).

Table 6. Types of photographs published by the four museums with the highest interaction during lockdown

Type 1: photographs showing museum spaces	Type 2: photographs taken by the virtual community (the example below is taken from a competition promoted by the Van Gogh Museum)	Type 3: photographs of artworks housed at the museum	Type 4: photographs of artworks from the museum represented in a humorous or creative way

The third of the format types analysed in the messages published by European museums are hashtags (Table 7), which are remarkable for both their high frequency of

use and their relatedness to the pandemic. The most common hashtag across the total sample of museums for the period of analysis was #MuseumFromHome, which appears in the publications of eight museums, including the Van Gogh Museum.

Another frequent strategy is the inclusion of the name of the museum together with words that acknowledge the need to stay at home during the lockdown period, such as #HermitageOnline (State Hermitage Museum) and #TretyakovkaHome (State Tretyakov Gallery), as well as messages of support during the most difficult times of the pandemic: #PradoContigo (Museo del Prado) and #staystrong (Van Gogh Museum).

Hashtags are also used as a link to the museums' activities: #Эрмитаждетям (#Hermitageforchildren) by the State Hermitage Museum, #artistambitions, #whoisvangogh and #colorsofspring by the Van Gogh Museum, #QuizPrado and #ObraComentada by the Museo Nacional del Prado, and #сказкивтретьяковке (#fairytales) by the State Tretyakov Gallery, in reference to a virtual cinema programme organised as part of an exhibition of Russian fairy tales. In this way, all of the information related to a tag can be retrieved by users anywhere in the world.

These hashtags reflect the efforts by the museums to continue their cultural activities during the lockdown period and to develop new forms of sharing culture online, with particular emphasis on playful and educational content aimed at adults and children alike.

Table 7. Hashtags most frequently used by the four museums with the highest interaction during lockdown

Museums	Hashtags
State Hermitage Museum (St Petersburg, Russia)	#Эрмитаждетям (#Hermitageforchildren) #stayhome #museumweek #HermitageOnline

Van Gogh Museum (Amsterdam, Netherlands)	#staystrong #MuseumFromHome #artistambitions #whoisvangogh #colorsofspring
Museo Nacional del Prado (Madrid, Spain)	#PradoContigo #QuizPrado #ObraComentada
State Tretyakov Gallery (Moscow, Russia)	#TretyakovkaHome #сказкивтретьяковке (#fairytales)

Finally, the analysis of weblinks showed them to be the message format with the lowest rate of interaction by followers, despite their inclusion in most of the museums' publications (video, photograph and text only). The results show that weblinks are mainly used to redirect users to the museum's website, blog or online store, or to link to other platforms, such as Instagram, Twitter, Spotify, SoundCloud and Pinterest.

Conclusions

The health crisis has caused numerous problems in the museum field, however, starting with its very survival. Prolonged and repeated periods of closure and restrictions over the past two years have led to a decrease in visitor numbers which is likely to continue into 2022, at enormous economic and operational cost to the sector (Igartua, Ortega-Mohedano and Arcila-Calderón 2020)**.** Nevertheless, the COVID-19 pandemic has revolutionised the way we live our lives and has been a watershed experience for many sectors of the economy, including museums and the wider tourism industry. During the period of lockdown, the main European museums opened their doors online to offer visitors virtual tours and commentaries similar to what they could experience in person. These and other initiatives have necessitated the development of new cultural communication strategies between museums and their audiences and acted as a pilot experience for their activities in the metaverse of the future.

The new situation has caused a paradigm shift in the dynamics of work and action in museums across Europe, where social media have consolidated their position as an essential means of communication during periods of restricted movement.

The results of this analysis of interaction on Meta with the most visited museums in Europe may be extrapolated to other platforms and other museums, outside Europe, with similar characteristics.

The content of the museums' messages may be framed as an inbound marketing strategy that seeks to attract the attention and participation of followers by informing and entertaining users through guided tours of the museums, detailed explanations of exhibited works and collections, Q&A sessions with virtual communities, and the institutions' social role of educating the public in culture and art.

In relation to format, three types stand out for their frequency of use and interaction potential: videos, photographs and hashtags. Videos were found to be the most innovative and effective strategy adopted by the museums during the period analysed. Particularly high interaction rates were observed in relation to the following three video types: short, pre-recorded video tours of the museum, accompanied by background music only (approx. 2-3 minutes); live broadcasts of guided tours of the museum lasting approximately 30 minutes; and 20-30-minute pre-recorded videos of experts explaining a specific artwork or room at the museum.

Photography was the most frequently used format and the second most effective source of interaction for the museums, providing visitors with virtual access to different spaces within the museums (rooms, corridors, buildings), works of art and competitions.

Finally, hashtags were used throughout the lockdown to create stable narrative discourses with the aim of contextualising and explaining collections, artworks and other types of content. The use of hashtags allows visitors to retrieve information in a relational

way, as in the case of the hashtag #museumfromhome, which was used with the double intention of educating the population to stay in their homes and encouraging them to participate in the museums' activities and challenges for recreational and educational purposes. The combination of the word "home" and the name of the museum is also a recurring tag among European museums: #ElReinaEnTucasa, #Rijksmuseumfromhome, #TretyakovkaHome.

Prior to the reopening of the museums, efforts were focused on developing the necessary measures to ensure the safety of visitors and staff. Owing to the differing impact of and response to the crisis across countries and territories, and the different challenges facing museums, management teams have had to think about new communication strategies, tools, routes and resources as they begin to resume their activities.

The future of museums in Europe lies in a hybrid model of interaction that combines virtuality and physical presence, even in times of normality. The planning and development of digital communication strategies is, therefore, set to become increasingly central to the survival of the museum. In this new context, it is essential to understand the impact the crisis has had on society and what citizens need from their cultural institutions.

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